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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,460	12/22/1999	Thomas A Figura	94-0280.03	7429
7590 08/22/2005				
CHARLES BRANTLEY MICRON TECHNOLOGY INC 8000 S FEDERAL WAY MAIL STOP 525 BOISE, ID 83716			EXAMINER LEE, CALVIN	
			ART UNIT 2818	PAPER NUMBER

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/471,460	Applicant(s) FIGURA et al.	
	Examiner Lee, Calvin	Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on August 2, 2005 (Amendment).
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 45-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 45-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL ACTION

Response to Amendment

1. The amendment of claims 45-46 and the addition of claims 47-49, received on August 2, 2005, are acknowledged.

Claim Rejections - 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 48-49 are rejected under 35 U.S.C. 102(b) as being anticipated by *Marks et al*

a) *Marks et al* (US 5,204,288) discloses a method of providing a material **20a**, **20b** in a site between metal features **14**, **15** on a wafer **10** [Fig. 9], comprising the steps of:

-performing a deposition of the material on the wafer in a site [col. 9, ln.48];

-plasma etching the material [col. 7, ln.38] in the same general site used to perform the deposition, wherein the step of etching further comprises etching generally simultaneously with performing the deposition [col. 9, ln.50].

b) In re claim 49, *Mark et al* suggests performing a plasma deposition [col. 6, ln.61].

Claim Rejections - 35 U.S.C. § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 45-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kurosawa* (US 4,371,407) in view of *Marks et al*.

Kurosawa discloses a method of providing a material over a wafer, comprising of:

-performing a deposition of a material **4** in a site over the wafer **1** [Fig. 3B], wherein the step of performing a deposition further comprises depositing a polymer **5** on the wafer [Fig. 3C];

-plasma etching the oxide material **4** in the same general site used to perform the deposition of the oxide material [col. 6, ln.15], wherein the step of etching further comprises etching generally simultaneously with performing the deposition of the polymer [col. 6, ln.19].

a) In re claim 45, *Kurosawa* does not suggest, “deposition occurs at a greater rate within the site than above the features.” However, *Kurosawa* discloses, “a plasma polymer film is deposited at a rate of about 100Å/min ...”

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the deposition rate of *Kurosawa* by utilizing the claimed deposition rate because one would adjust any or all of such parameters as source power, flow rate, bias power to result in the most effective polymer deposition.

b) *Kurosawa* teaches providing the material over metal features **3** (reads on claim 47), but not in a site between metal features. Nevertheless, such material in a site between metal features is known in the semiconductor processing art as evidenced by *Marks et al* disclosing the same method of providing a material **20b** in a site between metal features **14, 15** on a wafer **10** [Fig. 9].

It would have been obvious to one with ordinary skill in the art to modify the process of *Kurosawa* by utilizing a material in a site between metal features for the purpose of providing an etch resistance layer within the site being etched in a subsequent removal of the material, thereby avoiding an over-etch of the semiconductor material surrounding the site.

Response to Arguments

6. Applicants’ argument that “*Marks*’ deposition between metal lines occurs at a lower rate than other areas” is persuasive. However, *Kurosawa* suggesting a polymer deposition at a preferred rate, anticipates at least the amended feature. Moreover, *Kurosawa*, as well as *Marks*, teaches or suggests that the step of plasma etching comprises etching generally simultaneously with performing the deposition of the polymer.

Since the pending claims, including new claims 47-49, have been amended (especially claim 45) with a new feature “a greater rate within said site than above said features,” the claims are subjected to be finally rejected under *Kurosawa* and/or *Marks*, stated in detail above.

7. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire three months from the mailing date of this action. In the event a first reply is filed within two months of the mailing date of this final action and the advisory action is not mailed until after the end of the three-month shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than six months from the date of this final action.

Contact Information

8. Any inquiry concerning this communication from the Examiner should be directed to *Calvin Lee* at (571) 272-1896 on Mondays thru Thursdays 6:30-4:30PM. If attempts to reach the examiner by telephone are unsuccessful, Art Unit 2818's Supervisory Patent Examiner *David Nelms* can be reached at (571) 272-1787. The fax phone number for the organization (where this application is assigned to) is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system at <http://pair-direct.uspto.gov>. Should you have questions on access to the PAIR system, contact the Electronic Business Center at (866) 217-9197.

CL

Date: August 12, 2005


David Nelms
Supervisory Patent Examiner
Technology Center 2800